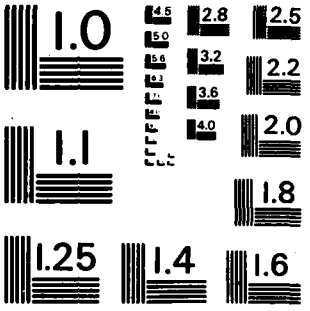
AD-A131 978 12830D LANCE MISSILE NUMBER 5355 ROUND NUMBER 388 MSC (U) ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WSMR NM ATMOSPHERIC SCIENCES LAB D C KELLER 15 JUN 83 1/1

UNCLASSIFIED ERADCOM/ASL-DR-1302 F/G 4/2 NL



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18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 12830D Lance, Missile Number 5355, Round Number 388 MSC are presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS

INTRODUCTION

12830D Lance, Missile Number 5355, Round Number 388-MSL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1730:04 MDT 15 June 1983. The scheduled launch time was 1730 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature (^{o}C), relative humidity, dew point (^{o}C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

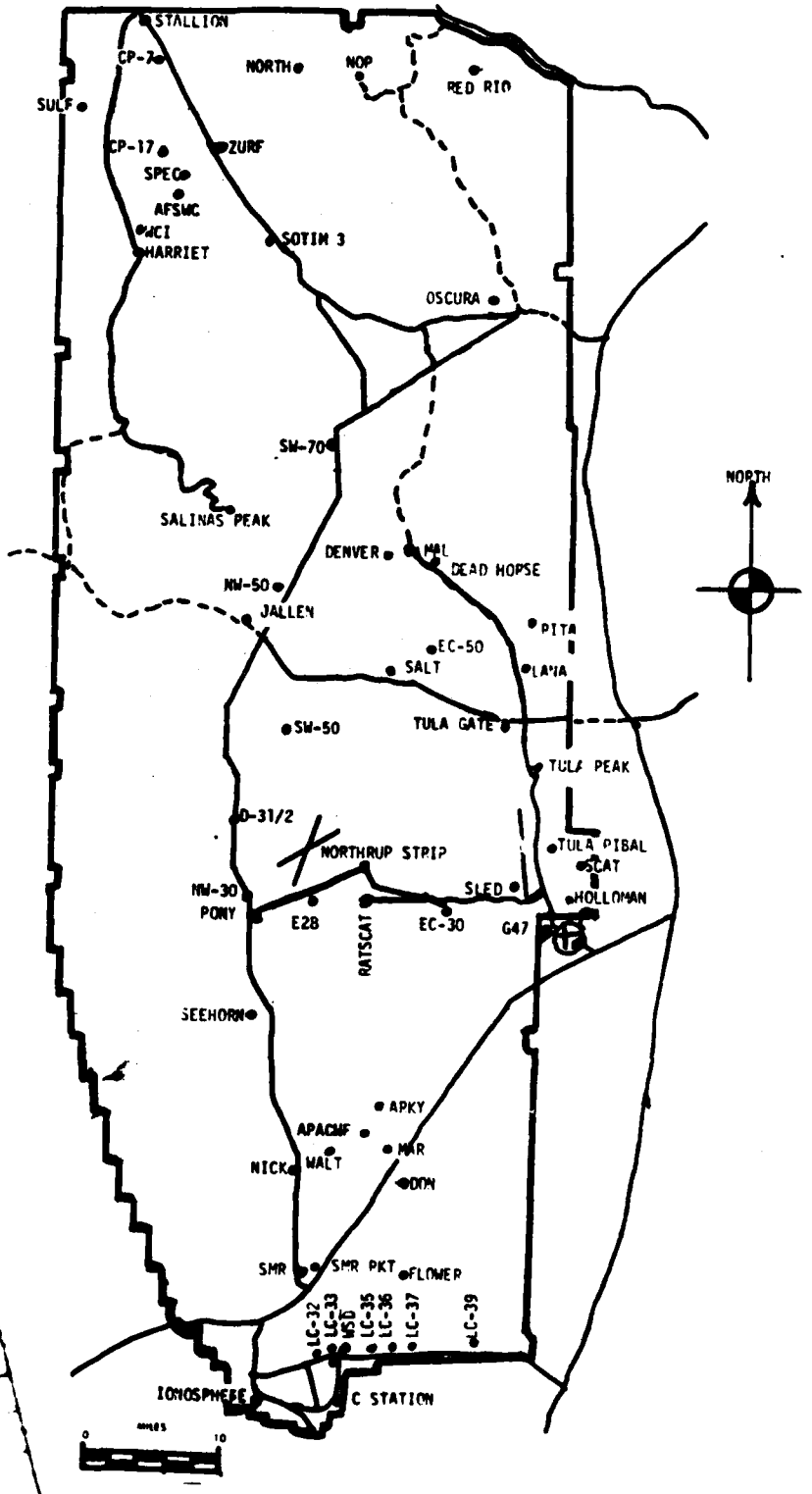
(1) Low level wind data were obtained from single-theodolite pilot-balloon observations at:

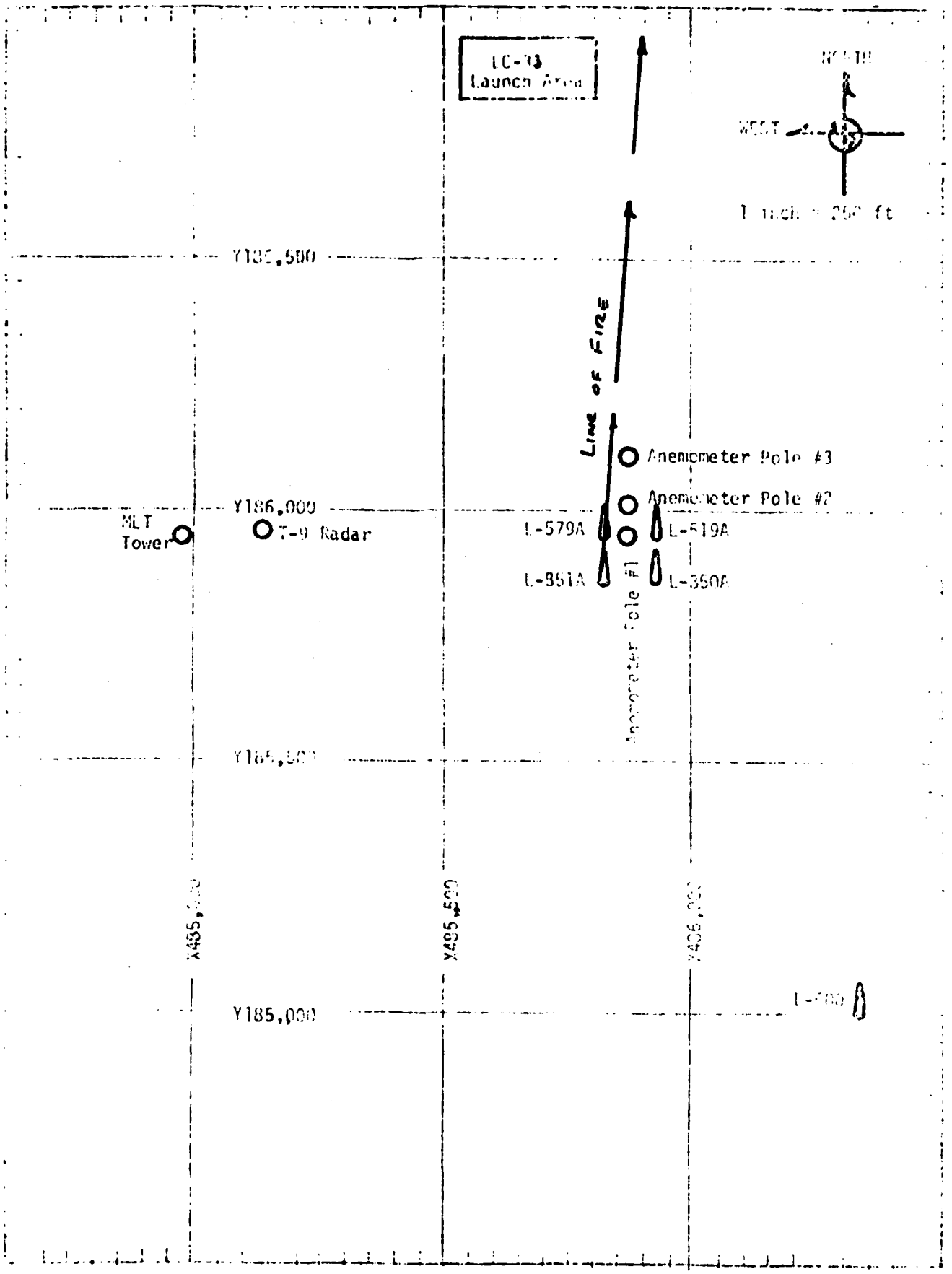
SITE AND ALTITUDE
WSD 3000 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from suface to high as possible feet in 500-feet increment.

SITE AND TIME
WSD 1745 MDT
Stallion 1730 MDT

WSMR METEOROLOGICAL SITES




LC-33
Launch Area
WEST
1 inch = 250 ft
Y186,500
Line of Fire
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MLT
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,500
X495,500
X505,500
L-580
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 15 (DAY) Jun (MONTH) 83 (YEAR) X= 484,982.64 Y=185,957.73 H= 3995.00

TIME M D T	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1730	876.1		25.3		7.5	32		354	15		10

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	9	CB	3500	1	CI	20,000				H ALDQS BDE

PSYCHROMETRIC COMPUTATION

TIME:	1730		
DRY BULB TEMP.	25.3		
WET BULB TEMP.	14.5		
WET BULB DEPR.	10.8		
DEW POINT	7.5		
RELATIVE HUMID.	32		

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186.012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30		MISS	T-30		MISS	T-30		MISS
T-20		MISS	T-20		MISS	T-20		MISS
T-10		MISS	T-10		MISS	T-10		MISS
T0.0		MISS	T0.0		MISS	T0.0		MISS
T+10		MISS	T+10		MISS	T+10		MISS

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185.057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	007	13	T-30	020	16
T-20	001	17	T-20	008	20
T-10	010	18	T-10	055	20
T0.0	354	15	T0.0	018	17
T+10	001	14	T+10	006	18

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	010	17	T-30	018	24
T-20	008	20	T-20	003	26
T-10	008	26	T-10	012	25
T0.0	075	22	T0.0	016	24
T+10	013	26	T+10	013	27

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM WSD DATE 15 JUN 83 TIME 1715

COORDINATES (WSTM) X= 488,852.29 Y= 184,982.45 H= 3993.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO _____.

HEIGHTS ARE METERS AGL X OR FEET AGL _____.

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	025	18
60	027	22
120	029	28
180	030	34
240	028	31
300	026	27
360	024	24
420	023	22
480	023	21
540	021	21
600	017	21
660	013	22
720	008	22
780	002	23
840	356	23
900	349	22
960	341	22
1020	339	24
1080	339	26
1140	338	27
1200	336	27
1260	334	28
1320	331	27
1380	327	25
1440	322	23
1500	314	21
1560	305	19
1620	303	19

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
1680	303	19
1740	303	18
1800	304	17
1860	305	16
1920	295	14
1980	282	12
2040	263	12
2100	245	13
2160	233	14
2220	228	12
2280	221	09
2340	239	05
2400	304	03
2460	322	05
2520	312	06
2580	304	07
2640	295	07
2700	285	07
2760	280	06
2820	273	05
2880	257	05
2940	237	05
3000		MISS

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM WSD DATE 15 JUN 83 TIME 1730

COORDINATES (WSTM) X= 488,852.29 Y= 184,982.45 H= 3993.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO _____.

HEIGHTS ARE METERS AGL X OR FEET AGL _____.

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	030	20
60	030	27
120	029	36
180	029	45
240	031	40
300	033	36
360	036	31
420	040	28
480	046	25
540	051	24
600	053	25
660	055	26
720	054	27
780	054	29
840	053	29
900	052	29
960	050	29
1020	047	29
1080	043	28
1140	041	28
1200	044	28
1260	046	28
1320	048	29
1380	050	29
1440	049	29
1500	044	28
1560	039	26
1620	034	20

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
1680	025	13
1740	003	09
1800	325	08
1860	294	10
1920	279	16
1980	273	21
2040	271	22
2100	271	21
2160	272	19
2220	275	17
2280	279	15
2340	274	16
2400	270	18
2460	268	18
2520	267	17
2580	266	16
2640	266	15
2700	266	14
2760	263	15
2820	259	16
2880	256	18
2940	253	20
3000	252	21

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS

TABLE 6

Launch and Impact Area Computer Met Message Data
15 JUN 83

WSD 1745 MDT		STALLION 1730 MDT	
METCM1324064		METCM1338067	
152380122873		152350151849	
00089028	30530873	00267006	29560349
01117023	29860863	01269013	29550839
02028030	29440839	02276015	29510815
03050019	29320801	03297015	29210778
04057011	29090755	04378012	28830734
05525014	28770712	05488017	28460692
06452021	28360671	06505022	28070651
07455022	27920632	07522021	27660612
08458025	27440594	08552021	27230576
09452030	27010558	09537026	26820540
10444030	26600524	10538024	26360507
11443030	2621-491	11525023	25950475
12435030	25680445	12534019	25370430
13437026	24960389	13483020	24690375
14358014	24270339	14450019	23950326
15249019	23560294	15400024	23160282
16283015	22800254	16327029	22400243
17402031	22510218	17401037	22240209
18412029	22090187	18433041	22150179
19447038	21620160	19432033	21840153
20432038	21250137	20431028	21210131
21459039	20750116	21425027	20600111
22460016	20640099	22444016	20650094
23350012	20690084	23422010	20910080
		24158005	21100068
		25142013	21300058
		26172014	21410050

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 83 1745 MDT
ASCENSION NO. 3?0

SIGNIFICANT LEVEL DATA
160020300
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL HUM. PERCENT
875.4	3989.0	30.8	8.5	25.0
869.0	4305.8	22.6	6.0	34.0
858.0	4767.7	20.8	4.8	35.0
850.1	5136.1	19.3	4.3	37.0
850.9	5416.9	20.3	4.8	36.0
734.4	8881.7	15.6	2.1	40.0
700.0	10212.1	12.5	-.7	40.0
633.6	12927.4	5.5	-1.6	60.0
582.5	15165.3	-1.1	-4.4	78.0
558.5	16263.3	-3.6	-6.1	71.0
518.0	18204.0	-8.4	-11.4	79.0
508.3	18686.0	-9.3	-15.6	60.0
504.0	19104.2	-10.3	-16.0	63.0
477.5	20265.5	-12.9	-22.3	45.0
461.7	21106.9	-14.6	-28.3	30.0
456.1	21520.2	-15.1	-31.1	24.0
400.0	24630.8	-22.4	-35.2	30.0
390.2	25228.1	-24.4	-34.9	37.0
383.6	25637.7	-23.8	-34.3	37.0
379.3	25906.4	-24.4	-35.1	36.0
351.1	27744.4	-29.0	-32.6	71.0
300.0	31395.2	-36.0	-40.3	64.0
281.0	32881.2	-39.1	-45.9	60.0
262.3	34413.0	-44.2		
250.0	35470.7	-45.5		
238.7	36481.5	-47.8		
222.5	38011.7	-47.2		
200.0	40324.1	-49.6		
167.2	44125.8	-57.0		
150.0	46390.1	-57.3		
144.8	47123.5	-58.5		
136.4	48356.3	-61.0		
116.2	51596.2	-66.7		
108.8	52912.4	-65.6		
100.0	54597.2	-67.3		
70.7	60020.2	-65.6		

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 63 1745 MDT
ASCENSION NO. 5 6

UPPER AIR DATA
16600203N6
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	873.4	30.9	[illegible]	25.0	996.2	680.6	50.0	28.0	1.000268
4000.0	873.1	30.5	[illegible]	25.3	996.8	680.5	49.9	27.9	1.000268
4500.0	858.9	21.8	5.5	38.4	1009.2	671.4	46.5	25.8	1.000264
5000.0	843.1	19.8	[illegible]	36.3	998.6	668.1	42.4	23.8	1.000260
5500.0	826.3	20.2	4.7	36.1	979.8	668.5	37.7	21.9	1.000256
6000.0	810.7	19.5	4.3	36.7	964.6	667.7	32.1	20.3	1.000252
6500.0	799.3	18.8	3.9	37.3	950.0	667.0	26.8	18.7	1.000248
7000.0	785.2	18.1	3.6	37.8	935.5	666.2	32.4	16.3	1.000244
7500.0	771.4	17.5	3.2	38.4	921.2	665.4	38.0	14.1	1.000240
8000.0	757.8	16.8	2.6	39.0	907.1	664.6	27.7	10.9	1.000236
8500.0	744.4	16.1	2.4	39.6	893.2	663.8	10.7	8.4	1.000232
9000.0	731.3	15.3	1.8	40.0	879.9	662.9	353.0	6.5	1.000228
9500.0	718.2	14.2	.8	40.0	867.9	661.5	326.3	5.7	1.000223
10000.0	705.4	13.0	-.5	40.0	856.0	660.1	284.9	9.4	1.000218
10500.0	692.6	11.8	-.7	42.1	844.2	658.6	269.9	15.7	1.000215
11000.0	680.6	10.5	-.7	45.8	832.6	657.1	264.5	20.9	1.000213
11500.0	667.7	9.2	-.8	49.5	821.2	655.7	261.9	24.8	1.000210
12000.0	655.5	7.9	-1.0	53.2	809.9	654.2	260.0	27.6	1.000208
12500.0	643.6	6.6	-1.3	56.9	798.9	652.7	258.4	24.8	1.000205
13000.0	631.9	5.3	-1.7	60.6	788.0	651.1	256.4	22.0	1.000202
13500.0	620.1	3.8	-2.2	64.6	777.5	649.4	256.3	22.7	1.000199
14000.0	608.5	2.3	-2.8	68.6	767.2	647.6	256.6	23.8	.000196
14500.0	597.2	.9	-3.5	72.7	757.0	645.8	256.2	25.1	1.000193
15000.0	586.1	-.6	-4.2	76.7	747.0	644.1	255.5	26.6	1.000189
15500.0	575.0	-1.9	-5.5	75.9	736.5	642.5	254.9	28.1	1.000185
16000.0	564.2	-3.0	-7.2	72.7	725.8	641.1	254.6	29.2	1.000180
16500.0	553.4	-4.2	-8.5	72.0	715.2	639.6	254.3	30.4	1.000176
17000.0	542.8	-5.4	-9.3	74.0	704.8	638.1	253.3	30.5	1.000173
17500.0	532.3	-6.7	-10.2	76.1	694.5	636.6	252.2	30.5	1.000170
18000.0	522.1	-7.9	-11.0	78.2	684.4	635.1	251.1	30.3	1.000167
18500.0	512.0	-9.0	-13.0	67.3	674.1	633.7	249.7	29.9	1.000162
19000.0	502.1	-10.1	-15.0	62.3	663.9	632.3	248.3	29.6	1.000158
19500.0	492.2	-11.2	-17.0	56.9	653.8	630.9	248.4	29.8	1.000154
20000.0	482.6	-12.3	-20.0	42.1	643.9	629.5	248.5	30.1	1.000150
20500.0	473.0	-13.4	-24.8	40.8	633.9	628.1	248.2	30.2	1.000146
21000.0	463.7	-14.4	-27.4	31.9	623.9	626.8	247.7	30.2	1.000143
21500.0	454.5	-15.1	-30.9	24.3	613.2	626.0	246.7	30.1	1.000139
22000.0	445.3	-16.2	-31.0	24.9	603.6	624.6	245.0	29.9	1.000137
22500.0	436.3	-17.4	-32.3	25.9	594.1	623.1	243.2	29.7	1.000135
23000.0	427.5	-18.6	-32.9	26.9	584.8	621.7	242.4	30.2	1.000132

STATION ALTITUDE 3,89.00 FEET MSL
15 JUNE 83 1745 MDT
ASCENSION NO. 040

UPPER AIR DATA
166002030
WHITE SANDS

Table 8 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
25500.0	410.9	-19.7	-33.6	27.8	575.7	620.1	241.6	30.7	1.000130
26000.0	410.4	-20.9	-34.3	28.8	566.7	618.8	242.9	30.2	1.000128
26500.0	402.1	-22.1	-35.0	29.7	557.8	617.4	245.4	29.4	1.000126
27000.0	393.9	-23.6	-34.9	34.3	549.8	615.5	247.5	28.3	1.000124
27500.0	385.8	-24.0	-34.5	37.0	539.3	615.0	247.4	25.7	1.000122
28000.0	377.8	-24.6	-34.9	37.7	529.5	614.2	247.3	23.1	1.000120
28500.0	370.0	-25.9	-33.7	47.3	521.1	612.7	243.3	20.6	1.000118
29000.0	362.3	-27.1	-33.1	56.8	512.8	611.2	236.1	18.3	1.000117
29500.0	354.7	-28.4	-32.7	66.3	504.7	609.6	227.0	16.4	1.000115
30000.0	347.3	-29.5	-33.1	70.5	496.3	608.2	215.2	14.9	1.000113
30500.0	339.9	-30.4	-34.2	69.6	487.6	607.0	201.5	14.1	1.000111
31000.0	332.6	-31.4	-35.2	68.6	479.1	605.8	188.1	14.0	1.000109
31500.0	325.5	-32.4	-36.3	67.6	470.8	604.6	177.1	14.3	1.000107
32000.0	318.6	-33.3	-37.4	66.7	462.6	603.4	166.9	15.1	1.000105
32500.0	311.8	-34.3	-38.4	65.7	454.6	602.2	158.8	15.7	1.000103
33000.0	305.2	-35.2	-39.5	64.8	446.7	601.0	151.9	16.4	1.000101
33500.0	298.6	-36.3	-40.7	63.6	439.1	599.6	145.5	17.3	1.000099
34000.0	292.1	-37.7	-42.3	61.8	432.2	597.8	139.5	19.0	1.000097
34500.0	285.8	-39.1	-44.0	59.4**	425.4	596.0	134.5	20.9	1.000096
35000.0	279.4	-40.5	-48.0	43.9**	418.3	594.3	131.7	21.6	1.000094
35500.0	273.2	-41.8	-52.9	28.4**	411.4	592.6	130.7	21.1	1.000092
36000.0	267.2	-43.1	-60.3	12.8**	404.6	590.9	129.7	20.5	1.000090
36500.0	261.3	-44.3			397.7	589.3	130.3	18.0	1.000089
37000.0	255.4	-44.9			389.8	588.5	132.0	15.7	1.000087
37500.0	249.7	-45.6			382.2	587.7	169.3	14.7	1.000085
38000.0	244.0	-46.7			375.4	586.2	192.7	17.1	1.000084
38500.0	238.5	-47.8			368.7	584.6	208.5	21.5	1.000082
39000.0	233.1	-47.6			360.0	585.1	217.2	25.8	1.000080
39500.0	227.5	-47.4			351.5	585.3	221.1	28.1	1.000078
40000.0	222.6	-47.2			343.2	585.6	224.4	30.5	1.000076
40500.0	217.5	-47.7			336.2	584.9	225.8	31.1	1.000075
41000.0	212.6	-48.2			329.3	584.3	225.8	30.1	1.000073
41500.0	207.7	-48.7			322.5	583.6	225.8	29.1	1.000072
42000.0	203.0	-49.3			315.9	582.9	226.4	28.5	1.000070
42500.0	198.3	-49.9			309.6	582.0	227.4	28.5	1.000069
43000.0	193.7	-50.9			303.7	580.8	228.5	28.5	1.000068
43500.0	189.2	-51.9			297.9	579.5	230.4	28.8	1.000066
44000.0	184.8	-52.9			292.3	578.2	234.0	29.9	1.000065
44500.0	180.5	-53.8			286.7	576.9	237.3	31.1	1.000064
45000.0	176.3	-54.8			281.3	575.7	240.4	32.3	1.000063

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 63 1745 MDT
ASCENSION NO. SEC

UPPER AIR DATA
16600203N0
WHITE SANDS

Table 8 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	172.2	-55.8			270.0	574.8	242.2	33.7	1.000061
44000.0	166.2	-56.8			270.8	573.1	243.5	35.2	1.000060
44500.0	164.2	-57.0			264.7	572.7	244.8	36.7	1.000059
45000.0	160.3	-57.1			258.6	572.6	245.6	37.9	1.000058
45500.0	156.5	-57.2			252.5	572.5	245.3	38.4	1.000056
46000.0	152.8	-57.2			246.6	572.4	245.0	38.8	1.000055
46500.0	149.2	-57.5			241.0	572.1	244.7	39.2	1.000054
47000.0	145.7	-58.3			236.2	571.8	245.4	39.4	1.000053
47500.0	142.2	-59.3			231.6	569.8	246.5	39.4	1.000052
48000.0	138.8	-60.3			227.1	568.4	247.6	39.4	1.000051
48500.0	135.4	-61.3			222.6	567.1	248.7	39.4	1.000050
49000.0	132.1	-62.1			218.1	565.4	249.8	40.2	1.000049
49500.0	128.9	-63.0			213.7	564.7	251.0	40.9	1.000048
50000.0	125.7	-63.9			209.3	563.6	252.1	41.7	1.000047
50500.0	122.7	-64.8			205.1	562.4	253.4	41.9	1.000046
51000.0	119.7	-65.7			200.9	561.2	255.6	40.2	1.000045
51500.0	116.8	-66.5			196.8	560.0	258.0	38.6	1.000044
52000.0	113.9	-66.4			191.8	560.2	259.8	35.9	1.000043
52500.0	111.1	-65.9			186.7	560.8	260.4	31.2	1.000042
53000.0	108.3	-65.7			181.9	561.1	261.3	26.6	1.000041
53500.0	105.6	-66.2			177.6	560.4	261.2	23.3	1.000040
54000.0	102.8	-66.7			173.9	559.8	260.2	21.3	1.000039
54500.0	100.5	-67.2			170.0	559.1	258.8	19.2	1.000038
55000.0	98.0	-67.2			165.8	559.1	257.2	17.2	1.000037
55500.0	95.6	-67.0			161.5	559.3	255.5	16.0	1.000036
56000.0	93.2	-66.9			157.4	559.5	253.5	14.8	1.000035
56500.0	90.9	-66.7			153.4	559.7	251.1	13.6	1.000034
57000.0	88.7	-66.6			149.5	559.9	247.0	12.3	1.000033
57500.0	86.5	-66.5			145.8	560.1	228.1	10.7	1.000032
58000.0	84.3	-66.3			142.0	560.3	205.9	10.5	1.000032
58500.0	82.3	-66.2			138.4	560.5	186.0	11.8	1.000031
59000.0	80.3	-66.0			134.9	560.7			1.000030
59500.0	78.2	-65.9			131.5	560.9			1.000029
60000.0	76.3	-65.7			128.2	561.1			1.000029

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 83 1745 MDT
ASCENSION NO. 340

MANDATORY LEVELS
16600280300
WHITE SANDS

Table 9

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL. HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	4764.	20.8	4.8	35.	44.4	24.7
800.0	6477.	18.9	4.0	37.	20.5	18.8
750.0	8287.	16.4	2.5	39.	18.7	9.3
700.0	10202.	12.5	-.7	48.	276.8	11.9
650.0	12224.	7.3	-1.2	55.	259.3	20.3
600.0	14365.	1.2	-3.3	72.	256.4	24.7
550.0	16640.	-4.6	-8.7	73.	254.1	30.6
500.0	19077.	-10.3	-16.0	63.	248.4	29.6
450.0	21712.	-15.6	-31.3	24.	245.9	30.0
400.0	24600.	-22.4	-35.2	30.	246.0	29.2
350.0	27767.	-29.1	-32.7	71.	220.1	15.4
300.0	31332.	-36.0	-40.3	64.	147.0	17.1
250.0	35393.	-45.5			167.1	14.7
200.0	40226.	-49.6			227.0	28.5
175.0	43060.	-55.1			241.2	32.7
150.0	46264.	-57.3			244.8	39.1
125.0	49986.	-64.1			252.3	41.8
100.0	54428.	-67.3			258.6	19.0
80.0	58856.	-66.0				

STATION ALTITUDE 4940.00 FEET MSL

15 JUNE 83 1700 MDT

ASCENSION NO. 24

SIGNIFICANT LEVEL DATA
166004024
STALLION

Table 10

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	RELATIVE HUMIDITY PERCENT
849.0	4940.0	21.0	9.3	47.0
844.2	5101.1	20.6	7.9	44.0
827.6	5665.9	21.7	6.4	37.0
700.0	10349.4	11.3	-1.5	41.0
641.8	12709.0	5.8	-6.1	42.0
548.1	16874.6	-4.9	-10.6	64.0
534.6	17518.4	-6.1	-13.2	57.0
500.0	19225.3	-11.2	-15.6	70.0
478.8	20315.3	-13.4	-16.1	80.0
468.7	20848.0	-14.8	-20.6	61.0
447.2	22011.2	-17.7	-19.2	88.0
437.4	22555.2	-19.5	-19.9	97.0
410.4	24106.1	-22.0	-26.9	64.0
400.0	24726.3	-23.1	-27.2	69.0
334.6	28951.6	-32.3	-37.1	62.0
300.0	31453.2	-38.7	-43.8	58.0
296.4	31725.9	-39.1	-44.3	57.0
250.0	35497.0	-47.9		
225.6	37703.9	-52.9		
210.1	39224.5	-50.6		
200.0	40284.5	-49.8		
195.2	40809.2	-48.9		
175.6	43080.2	-52.7		
156.5	45526.6	-53.5		
150.0	46422.6	-55.3		
122.4	50619.5	-63.6		
107.6	53198.2	-68.5		
100.0	54645.3	-68.9		
86.8	57473.5	-64.0		
82.5	58495.9	-66.0		
79.3	59293.2	-63.4		
70.0	61829.8	-62.3		
65.2	63277.0	-62.7		
64.2	63593.2	-60.6		
50.0	68748.2	-59.4		
35.4	75978.6	-54.3		
31.5	78475.2	-50.3		
30.0	79526.3	-51.2		
26.2	82453.7	-48.9		

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83 1700 MDT
ASCENSION NO. 24

UPPER AIR DATA
160040024
STATION

Table 11

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4940.0	849.0	21.0	9.3	47.0	1000.2	669.4	150.0	6.0	1.000274
5000.0	847.2	20.9	8.8	45.9	998.8	669.7	150.7	6.2	1.000272
5500.0	832.4	21.4	6.9	39.1	980.2	670.1	155.3	8.1	1.000262
6000.0	817.8	21.0	5.8	37.3	964.5	669.5	158.2	10.1	1.000255
6500.0	803.3	19.8	5.0	37.7	951.1	668.2	160.1	12.0	1.000251
7000.0	789.1	18.7	4.2	38.1	938.0	666.9	164.7	13.2	1.000246
7500.0	775.1	17.6	3.4	38.6	925.0	665.6	173.2	13.6	1.000241
8000.0	761.3	16.5	2.5	39.0	912.3	664.3	184.0	13.6	1.000236
8500.0	747.8	15.4	1.7	39.4	899.7	662.9	195.5	14.1	1.000232
9000.0	734.6	14.3	.8	39.8	887.3	661.6	210.8	12.8	1.000228
9500.0	721.6	13.2	-.0	40.3	875.1	660.3	230.8	12.0	1.000223
10000.0	708.8	12.1	-.9	40.7	863.1	659.0	253.9	12.9	1.000219
10500.0	696.1	10.9	-1.8	41.1	851.1	657.6	272.7	15.7	1.000215
11000.0	683.4	9.8	-2.7	41.3	839.2	656.2	278.7	18.4	1.000211
11500.0	671.0	8.6	-3.7	41.5	827.4	654.8	282.2	20.8	1.000207
12000.0	658.8	7.5	-4.7	41.7	815.8	653.4	284.1	21.5	1.000203
12500.0	646.8	6.3	-5.7	41.9	804.4	652.0	286.0	21.8	1.000199
13000.0	634.8	5.1	-6.3	43.5	793.0	650.5	288.3	21.4	1.000195
13500.0	622.9	3.8	-6.7	46.2	781.8	649.0	292.3	20.8	1.000192
14000.0	611.2	2.5	-7.2	48.8	770.7	647.5	298.0	20.2	1.000189
14500.0	599.7	1.2	-7.7	51.5	759.8	646.0	302.8	20.1	1.000187
15000.0	588.4	-.1	-8.2	54.1	749.1	644.4	306.6	20.4	1.000184
15500.0	577.4	-1.4	-8.8	56.7	738.6	642.9	307.8	21.3	1.000181
16000.0	566.6	-2.7	-9.5	59.4	728.2	641.4	305.6	22.8	1.000178
16500.0	555.9	-3.9	-10.1	62.0	718.0	639.8	303.7	24.4	1.000175
17000.0	545.4	-5.1	-11.1	62.6	707.7	638.4	302.5	25.1	1.000171
17500.0	535.0	-6.1	-13.1	57.2	696.7	637.2	301.4	25.8	1.000167
18000.0	524.6	-7.5	-13.8	60.7	687.0	635.4	301.3	25.5	1.000164
18500.0	514.4	-9.0	-14.5	64.5	677.5	633.6	301.6	24.9	1.000162
19000.0	504.4	-10.5	-15.2	68.3	668.2	631.8	300.9	24.3	1.000159
19500.0	494.6	-11.8	-15.7	72.5	658.2	630.3	299.7	23.7	1.000157
20000.0	484.8	-12.8	-15.9	77.1	647.8	629.1	298.7	22.9	1.000154
20500.0	475.3	-13.9	-17.6	73.4	637.8	627.7	297.9	21.9	1.000151
21000.0	465.8	-15.2	-20.3	64.5	628.4	626.0	297.1	21.0	1.000147
21500.0	456.5	-16.4	-19.6	76.1	618.8	624.5	297.6	20.9	1.000145
22000.0	447.4	-17.7	-19.2	87.7	609.4	623.0	298.1	20.8	1.000143
22500.0	438.4	-19.3	-19.8	96.1	601.0	621.0	299.0	20.6	1.000141
23000.0	429.5	-20.2	-21.7	87.5	591.0	619.9	300.0	20.3	1.000138
23500.0	420.7	-21.0	-24.0	76.9	580.9	618.8	300.5	19.9	1.000135
24000.0	412.2	-21.8	-26.4	66.3	571.0	617.8	299.2	19.2	1.000131

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83 1700 MDT
ASCENSION NO. 24

UPPER AIR DATA
1660040024
STALLION
Table 11 Cond't

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24500.0	403.8	-22.7	-27.1	67.2	561.3	616.7	296.8	18.6	1.000129
25000.0	395.4	-23.7	-27.8	68.5	551.9	615.5	286.5	18.8	1.000127
25500.0	387.1	-24.8	-29.0	67.7	542.7	614.1	276.6	19.6	1.000124
26000.0	379.0	-25.9	-30.2	66.9	533.7	612.8	271.4	20.1	1.000122
26500.0	371.1	-27.0	-31.3	66.1	524.9	611.4	266.4	20.9	1.000120
27000.0	363.4	-28.1	-32.5	65.2	516.2	610.0	265.0	20.9	1.000117
27500.0	355.8	-29.1	-33.7	64.4	507.7	608.7	264.4	20.7	1.000115
28000.0	348.3	-30.2	-34.9	63.6	499.4	607.3	262.2	20.6	1.000113
28500.0	341.0	-31.3	-36.0	62.7	491.1	605.9	258.8	20.5	1.000111
29000.0	333.9	-32.4	-37.2	61.9	483.1	604.5	255.6	20.2	1.000109
29500.0	326.7	-33.7	-38.6	61.1	475.2	602.9	252.4	19.0	1.000107
30000.0	319.6	-35.0	-39.9	60.3	467.4	601.3	248.8	18.0	1.000105
30500.0	312.7	-36.3	-41.3	59.5	459.8	599.7	244.0	18.1	1.000104
31000.0	306.0	-37.5	-42.6	58.7	452.4	598.0	239.4	18.3	1.000102
31500.0	299.4	-38.8	-43.9	57.8	444.9	596.5	234.9	19.4	1.000100
32000.0	292.8	-39.7	-45.6	52.9**	436.9	595.2	231.3	21.7	1.000098
32500.0	286.2	-40.9	-48.1	45.3**	429.3	593.7	228.4	24.0	1.000096
33000.0	279.8	-42.1	-50.7	37.7**	421.8	592.2	223.9	24.6	1.000094
33500.0	273.6	-43.2	-53.7	30.2**	414.5	590.7	219.0	24.9	1.000093
34000.0	267.5	-44.4	-57.0	22.6**	407.3	589.2	213.2	25.1	1.000091
34500.0	261.5	-45.6	-61.2	15.1**	400.3	587.7	202.5	24.7	1.000089
35000.0	255.7	-46.7	-67.2	7.5**	393.4	586.2	191.7	25.1	1.000088
35500.0	250.0	-47.9			386.6	584.7	185.2	26.9	1.000086
36000.0	244.2	-49.0			379.6	583.2	181.8	29.2	1.000085
36500.0	238.6	-50.2			372.8	581.7	180.3	31.4	1.000083
37000.0	233.1	-51.3			366.1	580.3	180.0	32.3	1.000082
37500.0	227.8	-52.4			359.5	578.8	191.3	33.5	1.000080
38000.0	222.5	-52.5			351.2	578.8	201.0	33.5	1.000078
38500.0	217.3	-51.7			341.9	579.7	212.4	33.9	1.000076
39000.0	212.3	-50.9			332.9	580.7	222.2	35.7	1.000074
39500.0	207.4	-50.4			324.4	581.4	229.1	38.3	1.000072
40000.0	202.7	-50.0			316.4	581.9	235.0	41.3	1.000070
40500.0	198.0	-49.4			308.3	582.7	236.4	42.7	1.000069
41000.0	193.5	-49.2			301.0	583.0	237.3	43.8	1.000067
41500.0	189.0	-50.1			295.2	581.9	238.5	43.5	1.000066
42000.0	184.7	-50.9			289.4	580.8	240.1	42.0	1.000064
42500.0	180.4	-51.7			283.6	579.7	241.9	40.5	1.000063
43000.0	176.3	-52.6			278.4	578.6	244.0	39.1	1.000062
43500.0	172.2	-52.8			272.2	578.2	246.3	37.9	1.000061
44000.0	168.2	-53.0			266.1	578.0	246.9	36.1	1.000059

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83 1700 MDT
ASCENSION NO. 24

UPPER AIR DATA
1660040024
STALLION

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

Table 11 Cond't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
44500.0	164.2	-53.2			260.1	577.8	247.5	34.4	1.000058
45000.0	160.4	-53.3			254.2	577.6	246.8	33.8	1.000057
45500.0	156.7	-53.5			248.5	577.4	245.6	33.6	1.000055
46000.0	153.0	-54.5			243.8	576.1	244.6	33.1	1.000054
46500.0	149.4	-55.5			239.1	574.8	243.9	32.0	1.000053
47000.0	145.9	-56.4			234.5	573.5	243.1	30.9	1.000052
47500.0	142.4	-57.4			229.9	572.2	241.9	29.1	1.000051
48000.0	139.0	-58.4			225.4	570.9	240.5	27.1	1.000050
48500.0	135.6	-59.4			221.1	569.6	239.2	25.7	1.000049
49000.0	132.4	-60.4			216.8	568.2	239.3	26.9	1.000048
49500.0	129.2	-61.4			212.6	566.9	239.4	28.0	1.000047
50000.0	126.1	-62.4			208.5	565.6	238.9	28.9	1.000046
50500.0	123.1	-63.4			204.4	564.3	238.0	29.7	1.000046
51000.0	120.1	-64.3			200.3	563.0	237.1	30.5	1.000045
51500.0	117.1	-65.3			196.3	561.7	237.8	29.5	1.000044
52000.0	114.2	-66.2			192.3	560.4	238.5	28.4	1.000043
52500.0	111.4	-67.2			188.4	559.1	239.7	27.8	1.000042
53000.0	108.7	-68.1			184.6	557.8	241.8	28.7	1.000041
53500.0	106.0	-68.6			180.5	557.2	243.8	29.6	1.000040
54000.0	103.3	-68.7			176.1	557.0	244.3	29.2	1.000039
54500.0	100.7	-68.9			171.8	556.8	243.2	27.3	1.000038
55000.0	98.2	-68.3			167.1	557.6	242.1	25.4	1.000037
55500.0	95.8	-67.4			162.2	558.8	244.9	20.3	1.000036
56000.0	93.4	-66.6			157.6	560.0	249.9	15.1	1.000035
56500.0	91.1	-65.7			153.0	561.1	257.3	11.9	1.000034
57000.0	88.9	-64.8			148.6	562.3	267.7	9.7	1.000033
57500.0	86.7	-64.1			144.4	563.3	270.1	9.1	1.000032
58000.0	84.6	-65.0			141.5	562.0	260.0	10.2	1.000032
58500.0	82.5	-66.0			138.7	560.7	251.7	11.2	1.000031
59000.0	80.5	-64.4			134.2	562.9	241.5	10.5	1.000030
59500.0	78.5	-63.3			130.3	564.3	230.4	10.2	1.000029
60000.0	76.6	-63.1			127.0	564.6	222.9	8.7	1.000028
60500.0	74.7	-62.9			123.8	564.9	214.8	6.3	1.000028
61000.0	72.9	-62.7			120.7	565.2	199.0	4.1	1.000027
61500.0	71.1	-62.4			117.6	565.5	186.1	2.5	1.000026
62000.0	69.4	-62.3			114.7	565.6	141.2	1.3	1.000026
62500.0	67.7	-62.5			112.0	565.4	86.6	3.7	1.000025
63000.0	66.1	-62.6			109.4	565.3	81.2	8.4	1.000024
63500.0	64.5	-61.2			106.0	567.1	79.8	12.7	1.000024
64000.0	62.9	-60.5			103.1	568.1	79.9	15.8	1.000023

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83 1700 MDT
ASCENSION NO. 24

UPPER AIR DATA
1660040024
STALLION

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

Table 11 Cond't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
64500.0	61.4	-60.4			100.6	568.3	79.9	18.9	1.000022
65000.0	60.0	-60.3			98.1	568.4	78.6	18.6	1.000022
65500.0	58.5	-60.2			95.7	568.6	76.8	17.7	1.000021
66000.0	57.1	-60.0			93.4	568.7	75.9	15.9	1.000021
66500.0	55.8	-59.9			91.1	568.9	75.9	13.2	1.000020
67000.0	54.4	-59.8			88.9	569.0	78.0	10.9	1.000020
67500.0	53.1	-59.7			86.7	569.2	92.0	11.2	1.000019
68000.0	51.8	-59.6			84.6	569.3	104.6	12.1	1.000019
68500.0	50.6	-59.5			82.5	569.5	109.8	12.2	1.000018
69000.0	49.4	-59.2			80.4	569.8	111.8	11.7	1.000018
69500.0	48.2	-58.9			78.4	570.3	113.1	11.0	1.000017
70000.0	47.1	-58.5			76.4	570.7	98.4	8.0	1.000017
70500.0	46.0	-58.2			74.5	571.2	71.2	6.1	1.000017
71000.0	44.9	-57.8			72.6	571.7	54.3	6.1	1.000016
71500.0	43.8	-57.5			70.8	572.2	57.6	6.5	1.000016
72000.0	42.8	-57.1			69.0	572.6	60.5	7.0	1.000015
72500.0	41.8	-56.8			67.3	573.1	65.3	8.3	1.000015
73000.0	40.8	-56.4			65.6	573.6	68.9	9.8	1.000015
73500.0	39.8	-56.0			63.9	574.0	69.5	11.2	1.000014
74000.0	38.9	-55.7			62.3	574.5	65.6	12.6	1.000014
74500.0	38.0	-55.3			60.8	575.0	62.5	14.0	1.000014
75000.0	37.1	-55.0			59.2	575.4	64.6	14.7	1.000013
75500.0	36.2	-54.6			57.7	575.9	70.5	14.9	1.000013
76000.0	35.4	-54.3			56.3	576.4	76.1	15.4	1.000013
76500.0	34.5	-53.5			54.8	577.4	82.3	17.3	1.000012
77000.0	33.7	-52.7			53.3	578.5	87.3	19.9	1.000012
77500.0	33.0	-51.9			51.9	579.5	91.2	22.5	1.000012
78000.0	32.2	-51.1			50.5	580.6	95.0	23.4	1.000011
78500.0	31.5	-50.3			49.2	581.5	98.5	24.3	1.000011
79000.0	30.7	-50.7			48.2	581.0	101.9	24.7	1.000011
79500.0	30.0	-51.2			47.1	580.4	106.0	22.3	1.000010
80000.0	29.3	-50.8			46.0	580.9	111.1	20.0	1.000010
80500.0	28.7	-50.4			44.9	581.4			1.000010
81000.0	28.0	-50.0			43.8	581.9			1.000010
81500.0	27.4	-49.6			42.7	582.4			1.000009
82000.0	26.8	-49.3			41.6	582.9			1.000009

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83 1700 MDT
ASCENSION NO. 24

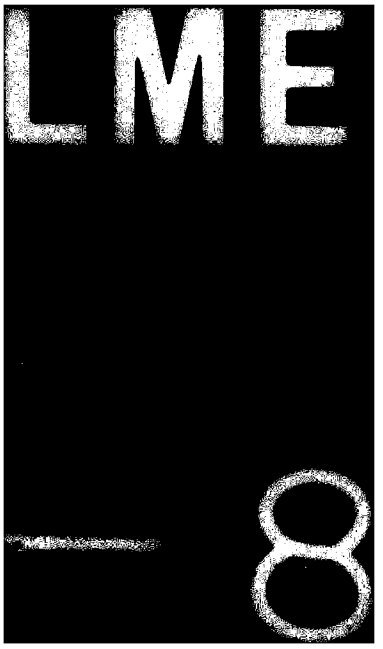
MANDATORY LEVELS
1600040024
STALLION

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

Table 12

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
800.0	6624.	19.6	4.8	38.	160.5	12.5
750.0	8434.	15.6	1.8	39.	194.1	14.0
700.0	10340.	11.3	-1.5	41.	267.7	14.7
650.0	12355.	6.6	-5.4	42.	285.4	21.9
600.0	14491.	1.2	-7.7	51.	302.8	20.1
550.0	16765.	-4.7	-10.5	64.	303.1	24.8
500.0	19200.	-11.2	-15.6	70.	300.4	24.0
450.0	21826.	-17.3	-19.3	84.	298.0	20.8
400.0	24688.	-23.1	-27.2	69.	292.3	18.6
350.0	27854.	-30.0	-34.6	64.	262.9	20.6
300.0	31394.	-38.7	-43.8	58.	235.4	19.1
250.0	35423.	-47.9			185.4	26.8
200.0	40192.	-49.8			230.0	42.1
175.0	43048.	-52.7			244.6	36.8
150.0	46302.	-55.3			244.0	32.2
125.0	50054.	-62.7			238.6	29.2
100.0	54492.	-68.9			243.0	26.8
80.0	58926.	-64.0			239.5	10.4
70.0	61624.	-62.3			165.8	1.6
60.0	64759.	-60.3			78.7	18.7
50.0	68496.	-59.4			110.7	12.0
40.0	73115.	-56.1			70.7	10.9
30.0	79194.	-51.2			106.0	22.3

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.


LME
8